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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/525,130	02/18/2003	Jeong-Hwan Oh	4251-4020	5275
27123	7590	11/28/2007		
MORGAN & FINNEGAN, L.L.P. 3 WORLD FINANCIAL CENTER NEW YORK, NY 10281-2101			EXAMINER KIM, CHONG R	
			ART UNIT 2624	PAPER NUMBER
			NOTIFICATION DATE 11/28/2007	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/525,130

Applicant(s)

OH, JEONG-HWAN

Examiner

Charles Kim

Art Unit

2624

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 September 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 February 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment and Arguments

1. Applicant's amendment filed on September 13, 2007 has been entered and made of record.
2. Applicant's arguments with respect to claims 1 and 6 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 3, 6, 7, 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Izawa et al., U.S. Patent No. 5,615,280 ("Izawa") and Jones et al., U.S. Patent No. 6,363,164 ("Jones").

Regarding claim 1, Izawa discloses a method of counting currency notes, comprising:
feeding a currency note into apparatus by detecting the currency note placed on a hopper using a hopper sensor and then driving a motor and a clutch (Figure 4, step 52);
detecting states of the fed currency note and then handling multiple feed/chain feed/jam feed errors based on the detection results (Figure 4, steps 52 and 57);

detecting the fed currency note, recognizing denomination of the currency note by scanning the image thereof, and extracting, storing and outputting an image of serial number region of the fed currency note (col. 3, line 54 – col. 4, line 15; figure 6; col. 6, lines 20 – 24); and

incrementing a count when denomination of the currency note has been recognized, and discharging the currency note to a stacker and a reject pocket based on the recognition results (Figure 6; col. 6, lines 29 – 35; col. 5, lines 12 – 18).

Izawa does not explicitly disclose scanning the entire image of the currency note and extracting, storing and outputting an image of serial number region of the note from the entire image. However, this feature was exceedingly well known in the art. For example, Jones discloses scanning an entire image of a currency note and extracting, storing and outputting an image of serial number region of the note from the entire image (col. 5, ll. 47-col. 6, ll. 9).

Izawa and Jones are combinable because they are both concerned with counting currency notes. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify Izawa so that the entire image of the currency note is scanned, as taught by Jones. The reason for doing so would have been to enhance the accuracy of the currency counting process by providing the maximum amount of information describing the currency note through the use of a full scan. Therefore, it would have been obvious to combine Izawa with Jones to obtain the invention as specified in claim 1.

Regarding claim 3, Izawa further discloses that in the detecting step, the image of the serial number region is output, together with text data obtained through character recognition of the image data (Figure 6; col. 6, lines 20 – 24).

Regarding claim 6, Izawa discloses an apparatus for counting currency notes, comprising:
an automatic feeder unit for feeding a plurality of currency notes placed on a hopper one by one (Figure 1, items 11 and 23; figure 4, item 52);

a drive unit for driving a motor when a hopper sensor detects the plurality of currency notes (col. 3, lines 41 – 51); a control unit for detecting states of the fed currency notes and handling multiple feed/chain feed/jam errors (Figure 4, steps 52 and 57);

a sensor unit for detecting the currency notes and scanning an entire image of the currency notes (Figure 1, items 16, 24, 25, and 26);

a signal processing unit for recognizing denominations of the currency notes from image data of the currency notes input from the sensor unit, extracting serial number regions with respect to each of the recognized denominations, and converting the extracted data into normalized image data of a constant size (col. 3, line 54 – col. 4, line 15; figure 6; col. 6, lines 20 – 24);

a transfer unit for transferring the fed currency notes to an outlet (Figure 1, item 21);

a selector unit for selectively discharging the currency notes to a stacker and a reject pocket in accordance with process results of the currency notes (Figure 1, item 47); and

an output unit for outputting stored image data to a printer (Figure 1, item 19).

Izawa does not explicitly disclose scanning the entire image of the currency note and extracting, storing and outputting an image of serial number region of the note from the entire image. However, this feature was exceedingly well known in the art. For example, Jones discloses scanning an entire image of a currency note and extracting, storing and outputting an image of serial number region of the note from the entire image (col. 5, ll. 47-col. 6, ll. 9).

Izawa and Jones are combinable because they are both concerned with counting currency notes. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify Izawa so that the entire image of the currency note is scanned, as taught by Jones. The reason for doing so would have been to enhance the accuracy of the currency counting process by providing the maximum amount of information describing the currency note through the use of a full scan. Therefore, it would have been obvious to combine Izawa with Jones to obtain the invention as specified in claim 6.

Regarding claim 7, Izawa further discloses that the signal processing unit outputs text data obtained through character recognition of the stored image data, together with the stored image data, through the output unit (Figure 6).

Regarding claim 9, Izawa further discloses that the signal processing causes the compensated image data to be upside down when a top and a bottom thereof are reversed (Figure 4, items 57 and 58).

4. Claims 2, 4, 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Izawa et al., U.S. Patent No. 5,615,280 ("Izawa"), Jones et al., U.S. Patent No. 6,363,164 ("Jones"), and Conant, U.S. Patent No. 5,680,472 ("Conant").

Regarding claim 2, Izawa further disclose scanning the currency note in lines and storing the scanned images in an internal memory in an image data form (Figure 1, col. 3, lines 53 – 64); finding contours of the currency note from the image data stored in the internal memory (col. 2, lines 33 – 35); [compensating for skew or geometrical distortion of the image data by geometrically correcting and preprocessing the image data]; recognizing denomination of the

currency note from the compensated image data using a pattern recognizing method employing template matching in accordance with the inserted direction of the currency note (col. 3, line 54 – col. 4, line 15); setting serial number region and extracting the image of the serial number region for the currency note whose denomination have been recognized using previously known serial number position information with respect to the recognized denomination (col. 5, line 58 – col. 6, line 7); converting the extracted image data into normalized image data of a certain size (col. 5, line 58 – col. 6, line 7); and storing and outputting the image data (col. 5, line 58 – col. 6, line 7; col. 6, lines 20 – 24).

Izawa does not disclose the concept of skew correction. However, deskewing is a well known concept in the art as shown by Conant (col. 2, lines 4 – 10).

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to provide deskewing (as taught by Conant) in the invention disclosed by Izawa and Jones. As Conant teaches using deskewing techniques requires less mechanical structure to properly position the bills, thus speeding the process and saving manufacturing costs.

Regarding claim 4, Izawa further discloses the step of correcting the compensated image data when top and bottom of the currency note is reversed, between step 3-3 and step 3-4 (Figure 4, items 57 and 58).

Regarding claim 8, claim 8 is rejected for the same reasons as claim 4. The argument analogous to that presented above for claim 4 is applicable to claim 8.

5. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Izawa et al., U.S. Patent No. 5,615,280 (“Izawa”), Jones et al., U.S. Patent No. 6,363,164

("Jones"), Conant, U.S. Patent No. 5,680,472 ("Conant") and Higgens et al., U.S. Patent No. 5,091,968 ("Higgens").

Regarding claim 5, the combination of Izawa, Jones, and Conant does not disclose that the image data is converted in binary. Figure 6 of Izawa seems to suggest that this is the case, but Izawa never directly states that the image data is stored or outputted in binary. This concept is well known as shown by Higgens (col. 47 – 65).

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to convert the image data into binary (as taught by Higgens) in the invention disclosed by Izawa, Jones, and Conant. Converting into binary would allow for easier pattern recognition.

6. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Izawa et al., U.S. Patent No. 5,615,280 ("Izawa"), Jones et al., U.S. Patent No. 6,363,164 ("Jones"), and Higgens et al., U.S. Patent No. 5,091,968 ("Higgens").

Regarding claim 10, Izawa does not disclose that the image data is converted in binary. Figure 6 of Izawa seems to suggest that this is the case, but Izawa never directly states that the image data is stored or outputted in binary. This concept is well known as shown by Higgens (col. 47 – 65).

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to convert the image data into binary (as taught by Higgens) in the invention disclosed by Izawa and Jones. Converting into binary would allow for easier pattern recognition.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles Kim whose telephone number is 571-272-7421. The examiner can normally be reached on Mon thru Thurs 8:30am to 6pm and alternating Fri 9:30am to 6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on 571-272-7453. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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November 19, 2007



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